Software Requirements Specification

for

Multi-Domain Recommendation Platform

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Table of Contents

Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The purpose of this document is to define the requirements for a Multi-Domain Recommendation Platform that consolidates personalised recommendations for movies, songs, and books in one application.

1.2 Document Conventions

- Standard IEEE SRS formatting is used.

- Features are numbered and sub-features use decimal notation.

- Technical terms are explained in the Glossary.

1.3 Intended Audience and Reading Suggestions

This document is intended for project managers, designers, developers, testers, users and documentation authors. The document contains the system overview, functional and non-functional requirements, system features, constraints and external interface requirements; the suggested sequence for reading the document is: 1 (introduction), 2 (overview), 4 (system features), 5 (other requirements), 3 (interface)

1.4 Product Scope

The platform acts as a one-stop hub where users can receive recommendations for movies, songs, and books based on their profile, activity, and current events. It integrates with external streaming and e-book services, offering previews and direct access links.

1.5 References

As of right now, no other documents or web addresses have been referred to in this document.

2. Overall Description

2.1   Product Perspective

The product will act as a "one stop shop" that will not only provide recommendations based on personal interest but also provide platforms on which the content can be accessed.

- Web and mobile-based platform.

- Integrates with APIs for streaming and e-book databases.

- Machine learning backend with hybrid recommendation (content-based + collaborative).

2.2   Product Functions

- Multi-domain recommendations.

- Cross-domain suggestions (e.g., movie → similar book).

- Event-based lists for holidays and festivals.

- Subscription-based premium features.

2.3   User Classes and Characteristics

- Guest Users (limited access).

- Registered Users (full personalisation).

- Premium Users (exclusive features).

- Admins (manage content & users).

2.4   Operating Environment

The software will be an online platform that will operate using a database, web server, data processing tools, k-nearest neighbours and some content filtering modules. It will also require some authorisation services. Besides that, the hardware requirements are book information, movies and songs information.

2.5   Design and Implementation Constraints

Limitations and constraints that the developers may face include regulatory policies of companies regarding data privacy, specific technologies and tools used, like database management systems may cause trouble, language support may be troublesome because of the

number of languages being used in the product, and scalability operations, as the system needs to evolve with technology.

2.6 User Documentation

User documentation components include user manuals, tutorials on how to operate the system, and some printable instructions. User guides and tutorials would be accessible via browsers.

2.7 Assumptions and Dependencies

Assumptions about the availability, reliability, and compatibility of third-party components and APIs could impact system functionality. Assumptions about the availability, reliability, and compatibility of third-party components and APIs could impact system functionality. Assumptions about the availability, quality, and integrity of data sources used for training recommendation algorithms may affect the accuracy and relevance of recommendations. Assumptions about stakeholder expectations, preferences, and priorities may influence system requirements and design decisions. Changes in stakeholder requirements or preferences may require adjustments to the system to align with evolving needs and objectives.

3. External Interface Requirements

3.1 User Interfaces

Responsive & Modern Design :

- Works seamlessly on desktops, tablets, and mobile devices.

- Supports light and dark themes for user comfort.

Navigation & Organisation :

- Clearly labeled sections for Movies, Songs, and Books.

- Advanced search and filtering (genre, language, release year, rating, etc.).

Consistent Look & Feel :

- Uniform design across all devices for a smooth experience.

User Interaction Features :

- Rate, review, and share content.

- Add items to personal favourites or playlists.

3.2 Hardware Interfaces

Books Information:

Efficiently retrieve details from physical books using barcode scanners or manual input, and access digital copies from file systems or cloud storage.

Media (Movies & Series) :

Interface with streaming platforms and databases for real-time movie and series information, requiring internet connectivity.

Song Information:

Access comprehensive song details from music databases or streaming services, with options for manual input of lyrical abstracts.

3.3 Software Interfaces

Content Database

- Stores metadata for movies, songs, and books (genre, release date, rating, previews, links).

- Supports CRUD operations for content management.

User Database

- Stores profile info, preferences, history, ratings, reviews, and playlists.

- Enables personalized recommendations and cross-device continuity.

Machine Learning (ML) Modules

- Works with content and user databases for hybrid recommendations.

- Uses collaborative filtering, content-based filtering, and event-based suggestions.

- Dynamically updates with new user activity data.

Content Filtering Engine

- Filters available content based on user preferences and feedback.

- Adapts to changing user interests and seasonal trends.

Similarity Matching (KNN & Advanced Models)

- Uses algorithms like KNN to find similar user profiles.

- Suggests content enjoyed by similar users; can use more advanced models for better scalability.

Website & Mobile Application

- Responsive frontend with secure backend (PHP, Node.js, or similar).

- Real-time interaction with databases and ML modules.

Payment Gateway Integration

- Supports UPI, debit/credit cards, and online wallets.

- Uses encrypted transactions for security.

3.4 Communications Interfaces

Protocols & Security

- Secure communication using HTTP/HTTPS.

- Encrypted data transmission to protect privacy.

<u>Notifications</u>

- Push notifications for mobile users (new releases, recommendations, subscription updates).

- Email and in-app notifications for promotions, reminders, and transactional alerts.

4.   System Features

4.1 <u>User Registration & Authentication</u>
- Email/phone signup with OTP verification.
- Social media login (Google, Facebook, Apple).
- Two-Factor Authentication (2FA).
- Forgot password with OTP reset.

4.2 <u>User Profile Management</u>
- Name, DOB, gender, profile photo.
- Favorite genres for movies, songs, books.
- Link streaming accounts.
- Edit/delete account option.

4.3 <u>Content Catalog</u>
- Movies: Genre, rating, language, trailer preview.
- Songs: Genre, artist, audio preview.
- Books: Genre, author, synopsis, sample reading.
- Sorting and filtering options.

4.4 <u>Recommendation Engine</u>
- Hybrid AI model with collaborative filtering + content-based methods.
- Event-based & trending lists.
- Cross-domain recommendations.

4.5 <u>Payment & Subscription Management</u>
- Multiple payment methods (UPI, cards, net banking, PayPal).
- Auto-renewal & cancellation.

- Digital receipts.

4.6 Social & Community Features
- User reviews, ratings, playlists, reading lists.
- Follow other users & share recommendations.

4.7 Notifications & Alerts
- New release alerts.
- Trending recommendations.
- Personalized weekly digest.

4.8 Admin Panel Functions
- Manage content database.
- Approve/remove reviews.
- Monitor subscription analytics.

4.9 Security & Data Protection
- End-to-end encryption for sensitive data.
- Fraud detection & account activity monitoring.

5. Nonfunctional Requirements

5.1 Data Security

The security of the data that is being used, saved and recommended in the above system does not affect the working of the system unless pirated.

5.2 Graphical User Interface (GUI)

GUI represents the overall outlook of the product to the user. It is expected to be appealing to the customer but does not affect the efficiency of the system hence it is considered to be a non-functional requirement.

5.3 Performance

The efficiency of the program considering aspects of time complexity or the space consumed does not affect the final outcome of the system.

5.4 Error tolerance

The system will be able to perform completely even in the presence of minor bugs, thus increasing its error tolerance.

Content preview which is a short description of the content such as trailers or promos in case of entertainment media and summary for books will be provided to the user for better guidance.

5.6 Awarding user roles

On the basis of the time spent, the progress and the type of content preferred by the user, the user will be awarded with user roles such as 'Beginner', 'Intermediate', 'Bookworm', 'Enthusiast', 'Maven'.

6. Website Tabs and Functionalities

6.1 Home

- Featured recommendations for Movies, Songs, and Books.

- Display of trending lists based on popularity and current user activity.

- Event-based picks curated for festivals, special occasions, and trending topics.

6.2 Movies

- Browse movies by genre, language, and rating.

- Watch trailers directly within the platform.

- Get direct links to streaming platforms for viewing.

6.3 Songs

- Browse songs by genre, artist, and album.

- Listen to short previews or audio snippets.

- Link to supported music streaming platforms for full playback.

6.4 Books

- Browse books by genre, author, and rating.

- Read summaries and sample chapters.

- Access purchase links or online reading options.

6.5 My Recommendations

- AI-curated personal recommendations across all domains.

- Cross-domain suggestions (e.g., recommending a book related to a watched movie).

6.6 Community

- User-generated reviews, playlists, and reading lists.

- Option to follow other users for shared recommendations.

- Share recommendations on social media or within the platform.

6.7 Profile

- Edit personal information and content preferences.

- View complete activity history (watched, listened, or read items).

- Manage subscription plans and payment details.

6.8 Notifications

- Alerts for new releases in user's preferred genres.

- Updates based on personalized recommendations and trends.

6.9 Help & Support

- Access FAQs and platform usage tutorials.

- Contact form for direct communication with support.

- Option to report issues or suggest features.